DOCUMENT RESUME

ED 375 714 HE 027 798

AUTHOR Johnson, Troy
TITLE Estimating the Economic Impact of a College or University on a Nonlocal Economy. ASHE Annual Meeting Paper.
PUB DATE 10 Nov 94
NOTE 44p.; Paper presented at the Annual Meeting of the Association for the Study of Higher Education (19th, Tucson, AZ, November 10-13, 1994).
PUB TYPE Reports - Research/Technical (143) -- Speeches/Conference Papers (150)

EDRS PRICE MF01/PC02 Plus Postage.
DESCRIPTORS Business; *Community Colleges; Economic Change; *Economic Impact; *Economic Research; Employment; Expenditures; Geographic Location; Higher Education; Income; Investment; Local Issues; Models; Rural Economics; *School Community Relationship; School Location; Statistical Analysis; Taxes
IDENTIFIERS *ASHE Annual Meeting; Caffrey Isaacs Economic Impact Model; Nonlocal Economy; *South Plains College TX

ABSTRACT

This study presents an expanded methodology for economic impact analysis to measure the impact of a community college, South Plains College (SPC), Texas, on a specified nonlocal economy. The research had four parts. First an economic impact study was conducted for SPC and its impact on the local economy of Hockley County, where the college is located. Second, existing economic impact analysis methodology was expanded based on a modified Ryan model (a variation of the Caffrey-Isaacs model) to facilitate the estimation of the economic impact on a nonlocal economy. Third the method was applied to the nonlocal economy, Lubbock County, which is adjacent to Hockley County. Fourth, the findings of both impact studies were evaluated to identify differences in method and relative impacts in both economies. The study found that differences in the method rested chiefly in writing the impact formulas and in collecting the impact data. Analysis showed that, in Hockley County, there was a return to the economy of about four dollars for every one dollar of taxes invested in the college, and that Lubbock County experienced a total business volume impact of $21 million. Comparison of impact volume between the two showed that total impact differed by only approximately $86,000. (Contains 30 references and 12 figures.) (JB)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

ED 375 714

ASHE Research Paper Presentation

Estimating The Economic Impact Of A College Or University On A Nonlocal Economy

PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY

ASHE

TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

Troy Johnson

Texas Tech University

November 10, 1994

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

☑ This document has been reproduced as received from the person or organization originating it.

☐ Minor changes have been made to improve reproduction quality.

• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Introduction

> An institution of higher education impacts its local community in many ways. The institution's primary impact, of course, is providing the opportunity of higher education to community members. In addition, the institution provides local cultural and sporting events. Further, the institution impacts on the community through its public service activities and the public service activities of its staff and faculty. The impacts discussed above are well known by the institution and the local community. However, a major impact of an institution is not always as well known or understood. This impact is the institution's economic impact on its local community. (Sturm, 1990, p. 1)

To illustrate the economic significance of colleges and universities higher education administrators and economists have developed economic models that estimate the impact higher education institutions have on business volume and employment levels in their local economies. "The basic objective of an economic impact study is relatively straightforward--to measure the increase in a region's economic activity attributable to the presence of the college or university" (Elliott, Levin and Meisel, 1988, p. 17). Economic impact studies provide institutional administrators and their constituents valuable information about the number of jobs created by a higher education institution as well as the increased business volume that is

IHE 0220 798

BEST COPY AVAILABLE

ASHE

ASSOCIATION
FOR THE
STUDY OF
HIGHER EDUCATION

Texas A&M University
Department of Educational
Administration
College Station, TX 77843
(409) 845-0393

This paper was presented at the annual meeting of the Association for the Study of Higher Education held at the Doubletree Hotel, Tucson, Arizona, November 10-13, 1994. This paper was reviewed by ASHE and was judged to be of high quality and of interest to others concerned with the research of higher education. It has therefore been selected to be included in the ERIC collection of ASHE conference papers.

generated from institutional, employee, student and visitor spending in the area economy. These studies often report surprisingly significant estimates of the short-term economic benefits communities, cities, counties and states receive from higher education institutions. According to Pennsylvania Economy League (1982) "The results of economic impact studies often are surprising to the public and indeed, to the academic community in terms of the prominent economic status of the college or university as an employer, consumer of goods and services, investor and property owner" (p. 1). Employing economic analysis techniques gives colleges and universities the ability to illuminate the economic benefits of higher education institutions. These studies may be helpful in securing public support for the expansion of higher education institutions such as in the case of Texas A&M International University in Laredo (Totty, 1994). On the other hand, the studies my be useful for pointing out deficiencies in the support of higher education as in the case of the University of Houston (Fitzgibbon, Glatthaar, Martin and Tedin, 1994). Kinnick and Walleri (1987) identify several of the potential advantages of conducting an economic impact study,

> (1) Inform the public that higher education does not operate in a financial vacuum.
> (2) Demonstrate that higher education makes a positive contribution to the economy.
> (3) Influence attitudes of business leaders, using language they understand - dollars and cents - about the value of higher education.
> (4) Influence voters and legislators to continue support. (p. 70)

Demonstrating economic contributions can strengthen the position of higher education institutions as they are increasingly challenged to validate their societal value.

Economic impact analysis provides an avenue for justifying expenditures on higher education and for quantifying the economic benefits a

community or region receives as a result of a higher education institution. Interest in demonstrating these benefits goes beyond U.S. boundaries to other nations such as England, where research focuses on similar economic impact methods that calculate direct and multiplier impacts of higher education institutions (Mallier and Rosser, 1986). As Dean (1991) points out, economic impact analysis has become increasingly necessary in higher education. Economic impact studies give concrete, quantifiable evidence of higher education's contribution to an economy by specifying the number of jobs and the amount of income or revenue that is directly attributable to a higher education institution. These studies can provide stakeholders with politically valuable information that emphasizes the economic benefits provided by higher education institutions. Hughes, Alston and Bayne (1988) convey the usefulness of economic impact analysis, "Systematic quantification and analysis of an academic institution's impact on local and regional economies can help college and university administrators to make decisions internally and to improve community relations" (p. 1). Furthermore, the need for higher education institutions to be able to quantify their economic impact is increasing, "The increasing direct role in promoting economic development that both public and private universities are being asked and, indeed, expected to play is a further reason for having the capacity to measure a university's regional economic impact" (Goldstein, 1990, p. 51).

Elements of Economic Impact Analysis

The typical higher education economic impact analysis quantifies the direct, indirect and total economic benefits an economy receives as the result of spending by a higher education institution, system or consortium. Direct benefits include items such as state allocations for funding and jobs that

contribute to an economy at face value. For example, if an institution that is allocated $1 million from the state and spends 90% of that money in the local economy, the direct institutional economic impact upon the local economy is $900,000. Indirect economic benefits are estimated through further economic analysis and the calculation of a multiplier effect which places a value on the number of times higher education dollars turnover in the economy studied. Describing this turnover of direct expenditures, Hughes, Alston and Bayne (1988) state that the economic impact of higher education institutions exceeds that of simple direct economic impact,

> An academic institution's economic impact on a community is much greater than the sum of the direct expenditures made by the university and its related constituencies. Each dollar cycles through the local economy several times, generating additional income and jobs." (p. 3)

The $900,000 of direct impact previously described is partially recycled by additional spending in the local economy which generates indirect economic benefits. The summation of direct and indirect benefits equals total economic benefits. These total benefits are generally reported in terms of increased dollars of business volume and numbers of jobs. Employment benefits are reported based upon the number of individuals employed by the institution and the number of jobs indirectly generated through the direct expenditures of the institution, employees, students and visitors. Similar to total business volume, total employment impact is determined by the application of an employment multiplier to the direct expenditures.

Local Impact Versus Nonlocal Impact

There has been steady growth in the use of economic impact analysis by higher education institutions since John Caffrey and Herbert Isaacs presented their methodology in the 1971 ACE report "Estimating the economic impact

of a college or university on the local economy." Leslie and Brinkman (1988) estimate that half of all higher education institutions have conducted an economic impact study. Many economic impact analysis studies have been conducted to determine the impact of an institution upon a local economy (for example, Creech, Carpenter and Davis, 1991; Gross and Weinstein, 1992; James and Puth, 1990; Kansas City Regional Council for Higher Education, 1991; Perkus, 1990; Ryan, 1983; Sturm, 1990; Walleri, 1987 and Wellsfry, 1988). Methodology exists to estimate the economic impact of a higher education institution upon an economic region in which the institution is located. If the institution is located within the economy for which the impact is studied, the economy is referred to as a local economy (Caffrey-Isaacs, 1971). Each institutional economic impact study defines its own geographic parameters for the impact that is reported. The definition of geographic boundaries for a study is usually institutionally defined and politically motivated. Some studies report the impact on more than one and progressively larger local economies. For example, the Brigham Young University economic impact report (1986) estimated institutional impact upon three local economies in which the institution is located. The university is located in the city of Provo, in Utah County and in the state of Utah. In this study the economic impact of Brigham Young was separately reported for all three of these distinguishable economies.

For the purpose of this study it is essential to maintain the clear distinction that a local economy is defined as an economy within which the institution studied is located. The economic impact analysis studies conducted to date have illustrated the economic impact upon local economies only. If, however, the institution is not located within the economy for which the impact is studied, the economy is referred to as a nonlocal

economy. An example is a study of the impact of Brigham Young University upon the adjacent state of Nevada. Methodology has not been expanded to estimate the economic impact of an institution upon an economic region in which the institution is not located. It is important to note that the terms local economy and nonlocal economy are not casually defined in any lay sense. They are specifically defined by whether the institution studied is physically located inside or outside the economy studied. Figure 1 illustrates this important delineation (all figures are presented at the end of the paper). In Figure 1, the institution is shown to be located within the local economy, but expenditures by the institution and its employees, students and visitors generate economic impact in both the local and nonlocal economies.

The essence of economic impact analysis methodology and the distinction between local and nonlocal economies, which was initially developed by Caffrey-Isaacs (1971), are described in Figure 2. College, employee, student and visitor expenditures all flow either into the local economy or into the nonlocal economy, generating revenue and jobs in both the local and nonlocal economies. In Figure 2, the term "two-area" refers to the local and the nonlocal economies specified in the figure as "Local business and government" and "Nonlocal business and government." After cycling through the multiplier effect, the expenditures ultimately result in local economic enhancement that is represented by "Local sources." "Local sources" refers to the total economic impact, or the summation of the direct and indirect impacts upon the local economy.

This study presents an expanded methodology for economic impact analysis that has not been previously described i.e., the impact an institution has upon an economy within which the institution is not located - a nonlocal economy. Existing methodology has only been developed for and applied to

describe the economic impact of an institution upon a local economy. Although the model in Figure 2 identifies that economic leakages or outflows of expenditures go to nonlocal business and government, research methodology has not been described to estimate the impact upon the nonlocal economy. The economics term leakage refers to economic resources that are not retained within the local economy which is an essential aspect of this study. This study analyzes leakages that flow into a specified nonlocal economy. In the Caffrey-Isaacs example, "Nonlocal business and government" includes all expenditures attributable to the institution that occur in the nonlocal economy. This study narrows this all-encompassing definition of the nonlocal economy by specifying a particular geographic subset of the aggregate nonlocal economy. That subset is referred to as the specified nonlocal economy.

Although the short-term economic impact estimated in these studies is very valuable and demonstrates the immediate economic significance of higher education institutions, it is important to recall that the real aim of colleges and universities is much greater as Romano and Herbert (1985) emphasize in their economic impact study, "It must be remembered throughout the course of this discussion, however, that the primary function of a college is to educate - to turn out knowledgeable, creative, productive, and responsible citizens" (p. 1).

Purposes

The purposes of this study are (1) to present a method for estimating economic impact upon a nonlocal economy through the utilization of the theoretical and methodological underpinnings of existing higher education economic impact studies, (2) to conduct an economic impact analysis of a

higher education institution upon a local and adjacent nonlocal economy thereby testing the expanded methodology and (3) to study the relative impacts of the studied institution upon the local and nonlocal economies.

This research is significant because of the information it provides to the studied institution as well as higher education institutions in general. The new approach to impact studies is valuable for meeting present and future accountability and validation needs of higher education institutions. Furthermore, since most economic impact studies are simply replications (Leslie and Brinkman, 1988) this study provides a new critical analysis of economic impact methodology that brings further insight into these studies. Finally, a method for assessing economic impact upon a nonlocal economy provides higher education institutions with a new tool for demonstrating economic impact and institutional benefits to their constituents. This revised methodology broadens a horizon previously limited by the scope of existing methodology.

Methodology

The research conducted for this study has four major parts. First, an economic impact study is conducted for a higher education institution to estimate the impact upon the local economy. This study follows the traditional methodology for conducting an economic impact analysis on a local economy. Second, existing economic impact analysis methodology that is currently designed to estimate the impact of an institution upon a local economy is expanded to facilitate the estimation of the economic impact upon a nonlocal economy. The development of expanded methodology to estimate the economic impact of an institution upon a nonlocal economy, is based on a modified Ryan (1983) model, which is a descendent of the

authoritative Caffrey-Isaacs model. The Ryan model was designed for community colleges and has been enhanced by further research since it was first presented. One example is the Kansas City (1991) study from which many elements are used as a series of stepping stones for conducting this study. Ryan's model is particularly appropriate because it is based on the economic impact of a community college, which is similar to this study.

> Ryan developed a derivative version of the Caffrey and Isaacs model which was implemented in a statewide study of the community colleges in New Jersey. . . . it (Ryan) employs an established methodology utilizing collection of a standard set of data readily available from a variety of reliable, public sources. (Kansas City, 1991, p. 5)

The third part of this study is the application of the expanded methodology to a higher education institution and specified nonlocal economy to estimate the economic impact upon the nonlocal economy. Fourth, the findings of the local and nonlocal impact studies are evaluated to identify the differences in methodology and relative impacts on the local and nonlocal economies.

This research is largely involved with conducting economic impact studies of one higher education institution on two interrelated but separate economies. One of the studies is a more traditional economic impact analysis of a higher education institution on the institution's local economy. The other study investigates a new approach to economic impact analysis by estimating the impact of the same institution upon a separate nonlocal economy. The two studied economies are interrelated because they are geographically adjacent and also because the nonlocal economy is a sizable metropolitan area offering an array of goods and services while the institution's local economy generally rural with a small town as the major trade center. Therefore, goods, services and jobs continuously flow between the two economies. For example, contributions are made to the college's local

economy through expenditures of students commuting from the metropolitan area to the rural institution. On the other hand, contributions are made to the nonlocal economy because the diversity of goods and cost advantage offered by the larger trade center encourages faculty and staff to make considerable expenditures in the adjacent metropolitan economy. These are just two examples of the several economic impact sources for the typical higher education economic impact analysis and the flow of economic injections between the rural local and metropolitan nonlocal economies. This study estimates the local impact of the main campus of South Plains College, located in the city of Levelland, on Hockley County Texas and the nonlocal impact of South Plains College on Lubbock County.

The Institution Studied

South Plains College (SPC), a community college located in Levelland, Texas, serves as the institution for which the economic impact studies are conducted. The SPC main campus is located in Hockley County and is approximately 20 miles west of the Lubbock County line. The 177 acre Levelland campus was created primarily as a transfer preparatory college on April 3, 1957 and enrolled its first students September 1958 (South Plains College, 1993). The community college also has additional campuses in nearby Lubbock and Hale Counties. Because of the defined research parameters, these additional campuses are not included in this study.

The college offers associate degrees and certificate programs. In 1992 the Levelland campus enrolled 3,553 students in credit courses, an increase of 9.6% from the previous year, and 843 students were enrolled in the college's non-credit courses (Texas Higher Education Coordinating Board, 1992). In the same year the college had 202 full-time and 72 part-time faculty, 172

administrative and staff employees and a total operating budget of $17.2 million (South Plains College, 1992). In 1994 SPC enrolled 3,974 students, employed 322 full-time and 83 part-time employees and had a total budget in excess of twenty million dollars.

The Local Economy

The local economy is defined as Hockley County which serves as the vast majority of SPC's local tax base. The county has an estimated population of 24,200 (Community Fact Sheet, 1994). Located near the center of this West Texas county, the city of Levelland serves as the major trade center in the county. Levelland, a rural community of approximately 14,000 residents, is located in the sparsely populated area of the South Plains. Hockley County is adjacent to Lubbock County while the city of Levelland is about 20 miles from the Lubbock County line and about 30 miles from the city of Lubbock. The area's economy is mostly supported by agriculture and crude-oil industries, yet SPC is the second largest employer in the county (Community Fact Sheet, 1994).

The Nonlocal Economy

The application of the expanded methodology studies the economic impact of the main campus of SPC upon Lubbock County. SPC's main campus is located in Levelland, Texas which is in Hockley County, adjacent to Lubbock County. The economic relationship between SPC and Lubbock County is lively; many faculty, students and staff live, shop, and dine in Lubbock County. The college purchases equipment and supplies from firms within Lubbock County. This is an example of how SPC is an export market for Lubbock County. "Export market" implies that certain expenditures

would not occur within Lubbock County were it not for the existence of SPC. Thus, SPC provides "'new" money to circulate within the region" (Kott, 1987). In other words, Lubbock County sells its goods and services to SPC which is outside Lubbock County boundaries.

Findings and Discussion

Differences Between Estimation Local and Nonlocal Impact

Before identifying the specific differences between estimating local and nonlocal impact, mention should be made of the perceived value of the local versus nonlocal study. The perceived value is important to consider because it may have implications for whether a proposal to conduct a nonlocal study is accepted. It has been mentioned previously that approximately half of all higher education institutions have conducted an economic impact study--assessing local impact only (Leslie and Brinkman, 1988). A reason for the frequency of local studies relative to the absence of nonlocal studies is that the political influence value of local economic impact studies are assumed to be higher than for the nonlocal economic impact studies. The general favoring of local economic impact studies is validated in this study because SPC did not eagerly embrace the idea of solely investigating an undeveloped area of economic impact research--the nonlocal impact study. Yet, the institution was more willing to participate in this research after it was explained that a local economic impact analysis would be conducted in addition to the nonlocal impact portion of the research.

In terms of methodological revisions, this preference for local studies may imply the lack of perceived value of nonlocal studies by institutional administrators. From a practical perspective, this means that convincing administrators or governing board members of the need to conduct a

nonlocal economic impact study will require strong evidence of support, stronger evidence than currently required as part of the methods for conducting a local impact study. That evidence needs to be in a form that could convince decision-makers of the political value of conducting an economic impact study upon a nonlocal economy. In the case of SPC, this nonlocal impact study may possibly assist the SPC system, which includes a campus in Lubbock County, in securing public support for a currently nonexistent tax base in Lubbock County.

In terms of specific differences between local and nonlocal economic impact methodology, the elements of economic impact do not vary between estimating local or nonlocal economic impact. These elements include defining the institution, economy and impact time frame, which are all essential preliminary steps for estimating impact on either a local or nonlocal economy. Similarly, the impact sources (institution, faculty/staff, students and visitors) and the types of impact (direct, indirect, total and employment) are the same when conducting a local or nonlocal impact study. Although these initial considerations for conducting an economic impact study are similar for local and nonlocal studies, differences arise when writing the impact formulae and collecting the impact data. These methodological revisions are reported in the following two sections: writing the economic impact formulae and collecting the economic impact data. The formulae and data collection revisions necessary for estimating nonlocal impact are made clear through conducting side-by-side economic impact studies upon both the local and nonlocal economies.

Writing the Economic Impact Formulae

Before writing the nonlocal impact formulae, the methodology for

estimating local economic impact was reviewed and the formulae for estimating the local impact of South Plains College on Hockley County were written. The process of revising existing models and writing appropriate formulae for estimating local impact provides a full understanding the nature of economic impacts for SPC and facilitates the writing of nonlocal impact formulae. Though the formulae for estimating nonlocal impact are generally and technically similar to the formulae for estimating local impact, there are discernible differences in the approach to estimating nonlocal impact.

Institutional impact formulae. The formulae for estimating institutional economic impact upon the nonlocal economy varies from the local impact formulae because the institutional expenditures counted for the nonlocal study are expenditures occurring in the nonlocal economy.

Faculty/staff impact formulae. Employee impact upon the nonlocal economy is estimated the same way as the impact upon the local economy is measured except that expenditures are sorted to estimate those employee expenditures occurring in the nonlocal economy.

Student impact formulae. The impact of full-time students is estimated the same way in the local and nonlocal economic impact studies. Once again, the essential difference is the separation and estimation of those student expenditures occurring in the nonlocal economy. On the other hand, this study reveals that part-time student impact should be estimated differently from traditional economic impact studies. The study revealed that economic impact on the local economy from part-time students living outside the local economy may be substantial and should be included in impact estimates. When students commute to school from outside the economy, the expenditures of these students represents new money to the

local economy.

However, part-time student impact on the nonlocal economy should not be included because it is too uncertain whether part-time student expenditures would have occurred regardless of the existence of the higher education institution. In fact, the expenditures in the local economy of part-time students living in the nonlocal economy may actually represent an economic loss to the nonlocal economy. For example, a student who travels from Lubbock County to college in Hockley County and spends money on gas, meals and other items ion Hockley County actually takes money out of the nonlocal economy. Although the part-time student implications of this leakage are very difficult to attribute directly to the institution, similar leakages by full-time students should be accounted for and subtracted from the total student impact formulae.

Visitor impact formulae. The estimation of nonlocal economic impact from visitors is one of the most challenging impacts to estimate. It is instructive to first summarize the local impact formulae before studying the nonlocal formulae. The local impact of visitors consists of the total amount spent on lodging and incidentals by visitors to the local economy who are from outside the local economy. When estimating nonlocal impact, it is important to start with the total number of visitors to Hockley County from outside the county and then multiply that figure times the percentage who incur expenses in the nonlocal economy due to the SPC event and multiply that figure times the average expenditure of a visitor in the nonlocal economy. Government and institutional officials were confident about estimating average expenditures and percentage of visitors lodging in the local and nonlocal economies. However, only the average expenditures of visitors who lodged in Lubbock County are included in the nonlocal

formulae whereas the local estimation includes average non-lodging expenditures. The discrepancy occurs in this case because the government and institutional officials were not confident about estimating the percentage of visitors who spend money in the nonlocal economy, but do not lodge there. It is generally agreed that most of the visitor expenditures in the nonlocal economy are accounted for because there are probably few visitors to SPC who on the same trip of the visit spend money in Lubbock County and do not spend the night in a hotel or motel.

Multiplier estimation. Multipliers are estimated in the same way for the local and nonlocal studies. Because of the natures of the two economies studied here, two different multipliers are used. This might not necessarily be the case in a different study. In some studies the economies might be similar, in which case identical multipliers would be justified. In another case, the multiplier might be larger for the local economy and smaller for the nonlocal economy. A possible example is a study demonstrating the economic impact of the University of Texas at Austin upon the city of San Marcos, where the institution's local economy (Austin, Texas) is larger and more self-sufficient than the nonlocal San Marcos economy.

Employment impact formulae. Employment estimations are made the same way for local and nonlocal impact studies. The nonlocal study requires the separate estimation of the number of jobs that are generated in the nonlocal economy.

Collecting the Economic impact Data

The major difference between collecting economic impact data for a local and nonlocal impact study is that the data must be sorted differently than it is in traditional impact studies. That sorting difference is simply that

the nonlocal impact estimates as defined by the geographic boundaries of the nonlocal economy must be identified instead of the local impact estimates. For example, data collection for institutional impact on the nonlocal economy is the same as that used for estimating the impact on the local economy except that expenditures are sorted and counted based on their occurrence in the nonlocal economy. The same is true of faculty/staff, student, visitor and employment impact.

Findings of the Economic Impact Analyses

In addition to presenting a methodology for estimating the impact of a college or university on a nonlocal economy, this study includes an analysis of the impact of a higher education institution (SPC) on both the local and nonlocal economies of Hockley and Lubbock Counties. In both economies SPC makes a considerable impact in terms of increased business volume and employment.

Impact on the Local Economy

It is no surprise that SPC has a considerable economic impact on the local economy. Hockley County receives a sizable contribution to overall business volume and employment levels because of SPC. The economic impact on the local economy is discussed separately in terms of business volume and employment.

Business volume impact. Direct expenditures attributable to SPC increased business volume in Hockley County by nearly $21 million in fiscal year 1994. Direct economic impact is derived from four expenditure sources: the institution, employees, students and visitors. The dollar amount of these impact sources and the percentage of the total direct impact are presented in

Figure 3. Institutional expenditures of just over $5 million represent 36% of the total direct business volume impact on the local economy that is attributable to SPC. Approximately 43% of the total institutional budget is spent in Hockley County.

Student expenditures tell an interesting story because of the magnitude of the impact and the source of the expenditures. Approximately $4.6 million in student expenditures contribute about 33% of the total direct business volume impact on Hockley County. This large percentage of total direct impact attributable to student expenditures is worth noting because SPC draws in a substantial amount of student expenditures from students living outside Hockley County. More than 58% ($2.6 million) of the student expenditures come from students living outside Hockley County. This does not include those who are originally from outside the county and are currently living in the residence halls. It is important to note that this $2.6 million of expenditures would not occur in Hockley County if SPC did not draw these students into the county. More than 1,100 full-time students living outside Hockley County contribute $1.2 million to the county's economy. Furthermore, 1,417 part-time students living outside the county generate more than $1.5 million in direct business volume.

Employees (faculty/staff) are the third largest contributors to total direct business volume impact in the local economy (29% or approximately $4 million). Total employee expenditures in the local economy are diminished because the employees spend substantial amounts of disposable income outside Hockley County. First, a large portion (about 30%) of disposable income leaves the county in the form of mortgage, insurance and retirement plan payments. Additionally, of the remaining disposable income, approximately 62% is spent in Hockley County while much of the rest is spent

in the larger metropolitan area of Lubbock County rather than in the smaller shopping areas in Levelland.

Even though it appears that much of SPC institutional and faculty/staff expenditures are spent outside Hockley County and in Lubbock County, those expenditures may have a hidden advantage to Hockley County and its residents. The flow of those dollars to Lubbock County encourages the growth of Lubbock in terms of services, events, shopping etc. The expansion of Lubbock offerings may actually provide the opportunity for a better quality of life for Hockley County residents since Lubbock is easily accessible to those who wish to enjoy the shopping, services and activities offered in Lubbock. Although speculative, it could be true that having the money flow out of Hockley County creates another advantage (decreasing resident anxiety) for Hockley County residents because it prevents their community from growing to a population and economic level that may be undesirable and could bring with it social maladies associated with larger cities.

The final source of direct impact comes from the more than 52,000 visitors to Hockley County that are attributable to SPC. Although SPC attracts a considerable number of visitors annually, total visitor expenditures contribute only about 2% or $273,984 in direct economic impact. This low amount, less than $6 per visitor, is mostly attributable to the fact that Levelland has only a few hotel rooms, therefore visitors who spend the night more frequently stay in Lubbock. In the next stage of estimating economic impact, all of the direct expenditures by the institution, faculty/staff, students and visitors are summed to estimate to indirect economic impact.

The indirect business volume multiplier used in this study is reasonable based on Leslie and Brinkman (1988) guidelines. Because the Hockley County economy is small, not totally self-sufficient and susceptible to

sizable leakages because of the vast consumer market in nearby Lubbock, initial expenditures do not recycle in the economy for very long before leaking out into other economies. The economic multiplier used for the local economy is 1.5. Indirect impact is approximately $7 million. The sum of direct and indirect impact totals more than $20 million.

When discussing the total business volume impact contributed to the local economy by SPC it is useful to complete the economic impact picture by considering the amount of local tax revenues collected to support the college. According to the college's 1993 audit report (Pate and Downs, 1993) $4,948,779 in taxes were collected to support the college. This amount is recouped in direct institutional expenditures alone, which exceed five million dollars (Figure 3). By adding to institutional expenditures the employee, student and visitor expenditures that occur in the local economy, total direct business volume impact becomes $13 million, more than twice the amount of taxes collected to support the college. Finally, after the multiplier effect, Hockley County receives slightly more than twenty million dollars in increased business volume due to college related or attributed expenditures. In the fiscal year studied, that amounts to a return to the economy of about four dollars for every one dollar of taxes invested in the college.

Employment impact. South Plains College makes a substantial employment impact on the local economy and is the second largest employer in the county (Community Fact Sheet, 1994). At the time of this study, 255 (79.19% of all full-time SPC employees) live in Hockley County (see Figure 4). Further employment is attributable to the more than thirteen million dollars of direct expenditures in the local economy. This direct expenditure impact generates an indirect employment impact of 562 jobs in the local economy, bringing the total employment impact of the college on the local economy to

817 jobs. Additionally, 44 part-time employees earn paychecks and live in Hockley County.

Impact on the Nonlocal Economy

The considerable size and diversity of the Lubbock economy attract a significant amount of spending that is attributable to SPC. In terms of employment, some SPC faculty and staff prefer to live in the larger Lubbock metropolitan area. The estimated economic impact of SPC on the nonlocal economy of Lubbock County is described in terms business volume and employment.

Business volume impact. The total economic impact of SPC on the nonlocal Lubbock economy exceeds $21 million. The dollar amounts and percentages of direct business volume impact on the nonlocal economy are presented in Figure 5. Institutional expenditures in the nonlocal economy of Lubbock County exceed $11 million, generating 48% of the total direct business volume impact attributable to the college. Nearly $5.3 million in business volume is generated in Lubbock County by college expenditures and nearly 46% of all institutional expenditures occur in Lubbock County. The more than $2.1 million of direct business volume generated in Lubbock County by SPC students represents 19% of the total direct impact on the nonlocal economy. Faculty/staff expenditures total nearly $3 million or 27% of the total direct business volume impact. Finally, visitor expenditures contribute nearly three-quarters of a million dollars to the nonlocal economy or 6% of the total direct impact.

The business volume multiplier used in this study is justified by Leslie and Brinkman (1988) who suggest that community college expenditures in a metropolitan area typically turn over 1.9 times. Thus, a business volume

multiplier of 1.9 is used which results in nearly $10 million dollars of additional business volume. The direct business volume impact of $11 million plus $10 million of indirect impact yields a total impact on business volume of $21 million.

Employment impact. Although only 54 (16.77%) of full-time SPC employees live in Lubbock County (Figure 6), a total of 500 jobs in Lubbock County are attributable to SPC related expenditures (Figure 6). Interestingly, according to the City of Lubbock report (1994) the direct employment impact of 54 jobs technically places SPC in the top 100 firms (actually near the third quartile) in Lubbock County as ranked by total number of employees. It is the indirect employment that is generated by the more than $11 million in direct expenditures that quickly boosts total employment in Lubbock County attributable to SPC to 500. Indirect employment represents 446 additional jobs.

The Relative Impact of South Plains College on the Local and Nonlocal Economies

The purpose of this section is to compare the direct, indirect, total and employment impacts of SPC on Hockley and Lubbock Counties. Figures 6-12 provide summaries of the data discussed in this section.

Direct Business Volume Impact

Both Hockley and Lubbock Counties gain sizable business volume increases that are attributable to SPC. Hockley County's direct business volume is increased by nearly $14 million and Lubbock County's by more than $11 million, Figure 7. In comparative terms, that translates to an increase of business volume for Hockley County that is 26% more (almost

$2.9 million more) than in Lubbock County. The size of the impact from each of the four impact sources varies between the economies. For example, the portion of institutional expenditures contributing to total direct impact is 12% higher for Lubbock County than for Hockley County (Figures 3 and 5). In other words institutional expenditures make up a larger percentage of total direct expenditures in the nonlocal economy (48%) compared to the local economy where institutional expenditures account for only 36% of total direct expenditures. On the other hand, the percentage distribution of where institutional expenditures occurs indicates that close percentages are spent in Hockley and Lubbock counties (43.82% and 45.98% respectively, Figure 8) while only 10.2% of the institutional budget is spent outside the two economies. Initial expenditures of the institution and employees may be more frequently made in Lubbock County because in the Hockley County economy prices are sometimes higher, selections may be fewer, speed of delivery may be slower or desired services may be unavailable--entertainment in the form of a movie theater, for example.

Faculty/staff expenditures are relatively equal on a percentage basis representing 27% and 29% of the total direct impact on Lubbock and Hockley Counties respectively (Figures 3 and 5). When all faculty/staff expenditures are combined (Figure 9) 38.4% is spent in Lubbock County, 33.76% is spent in counties other than Lubbock and Hockley (much of this is represented by mortgage payments) and 27.84% is spent in Hockley County. Excluding mortgage payments, approximately 55% of total faculty/staff spending occurs in Lubbock County and 40% in Hockley County. From this information faculty and staff spend more of their disposable income in Lubbock County rather than Hockley County.

Student expenditures account for 33% of the total direct expenditures

in the local economy while they represent only 19% of the total for the nonlocal economy. Student expenditures in Hockley County exceed student expenditures in Lubbock County by $2.5 million. A sizable amount of expenditures by students comes to Hockley County from Lubbock County. This translates to an economic gain for Hockley County and a loss for Lubbock County. Part-time students contributed more than $1.4 million to the Hockley County economy, most of which comes from students commuting to SPC from Lubbock County. No addition to direct impact from part-time student contributions was made to total student expenditures for Lubbock County. Part-time students are not included because it is difficult to justify that expenditures in Lubbock County by part-time students are fully attributable to SPC. Part-time students living in Lubbock county are more likely have jobs in Lubbock County that are the source and reason for student expenditures in Lubbock County rather than SPC.

SPC attracts more than 52,000 visitors to Hockley County each year. However, lodging accommodations in Hockley County are limited which results in a transfer of lodging expenditures to Lubbock County where hotels and motels are plentiful. When lodging expenditures leave Hockley County., meals and miscellaneous expenditures are also lost because they are spent closer to the lodging facility--typically in Lubbock County. In fact, the dollar amount of visitor expenditures in Lubbock is nearly three times the amount spent by visitors in Hockley County. Regardless, in both economies, visitor expenditures make up only a small portion of total direct expenditures attributable to SPC (6% for Lubbock County and 2% for Hockley County).

Indirect Business Volume Impact

Indirect impact is nearly $3 million greater (42%) for Lubbock County

than for Hockley County (Figure 10). The internal linkages of the Lubbock economy encourages direct expenditures or first round spending to circulate within the Lubbock County economy longer than in the Hockley County economy. The multipliers used in this study, 1.9 for Lubbock and 1.5 for Hockley, suggest that a dollar of direct expenditure circulates in Lubbock County about 25% longer before leaving the economy than it would if it were first spent in Hockley County. A dollar spent in Lubbock County recycles longer in Lubbock County mostly because of the variety of goods and services offered in the county. On the other hand, a dollar spent in Hockley County may not circulate as many times because many goods and services are either not provided in Hockley County or are provided in a preferential fashion (lower price, more quickly accessible, larger variety) somewhere other than Hockley County. Typically that other location is Lubbock County.

Total Business Volume Impact

After direct and indirect impact are added together, the difference between total economic impact in terms of business volume is very small, only $85,617, see Figures 11 and 12. Although direct impact for the local economy is about 26% greater than for the nonlocal economy, indirect impact is about 42% greater for the nonlocal economy than the local economy. Therefore, the significance of the economic multiplier is emphasized as nonlocal impact is substantially increased by the recycling effect. In the end this means that the total impact on the local and nonlocal economies differs by only $85,617 with the local economy receiving a total of $20,975,666 in increased business volume and the nonlocal economy receiving slightly more, $21,061,283 in total economic impact. Figure 12 provides a cumulative presentation of the direct, indirect and total business volume impacts for the

local and nonlocal economies.

Employment Impact

Finally, employment impact is noticeably higher for the local economy in terms of direct, indirect and total employment (Figure 6). SPC contributes nearly five times as many full-time direct jobs to Hockley County than to Lubbock County. Indirectly created jobs number 100 more for the local economy than the nonlocal economy. Finally, the total number jobs created by SPC in Hockley County exceeds the number created in Lubbock County by 317 (63%). Regardless of the comparative differences between employment contributions for each county, SPC makes a sizable contribution to employment in both counties: 817 jobs for Hockley County and 500 jobs for Lubbock County.

Shortcomings of Other Studies

A few common limitations or shortcoming of previously conducted studies and methods were revealed through experience in these two economic impact studies and review of the literature of previous research. These shortcomings warrant consideration from those conducting economic impact studies for higher education institutions. One common shortcoming occurs when estimating the employment multiplier. Caffrey-Isaacs (1971) proposed an employment multiplier of 70 jobs per million dollars of direct impact. According to Leslie and Brinkman (1988) this multiplier is no longer valid and must be adjusted for inflation. However, some economic impact studies continue to use the Caffrey-Isaacs multiplier which was estimated in 1971. The inflation adjusted multiplier used in this study (based on 1993 dollars) is 40.2 jobs per million dollars of direct impact. Failure to use an

inflation adjusted jobs multiplier results in overstatement of employment impact.

Another overstatement of impact occurs when studies count the entire amount of average annual expenditures for students or employees without subtracting leakages or external spending. For example, to determine direct student impact, studies sometimes estimate the average annual expenditures of a student living in a local economy and multiply that dollar amount times the number of students living in the economy, yet no reduction in average annual expenditures is made for money spent outside the economy. Sometimes the same overstatement of impact occurs for employees as an average disposable income figure less mortgage payments is assumed to be entirely spent in the studied economy while some of disposable income surely leaks out of the economy. As in the employment multiplier case, overstatement of impact may result. A strength of this study is that survey results are used to estimate the amounts or percentages of expenditures that occur in either the local or nonlocal economy. In the case of estimating local student impact, the average amount spent outside the local economy is deducted from the average annual student expenditures prior to calculating direct student impact. This method minimizes overstatement of student impact and improves the accuracy of the impact estimates.

Recommendations for Further Study

Further study should be conducted to learn more about the breadth of the economic impact of higher education institutions and to learn more about the effectiveness of economic impact analysis in achieving useful outcomes. The first area of further study is more concerned with the long-term impact of colleges and universities and the latter area is concerned with

the more immediate value of economic impact studies.

First, the long-term positive impact of higher education is frequently espoused as the most significant contribution of colleges and universities. Higher quality of life, increased productivity and increased wealth for both individuals and society are generally believed to have a direct, positive relationship with the presence of higher education. However, these positive relationships as well as the value of these relationships, are not easily quantifiable. Furthermore, the Caffrey-Isaacs methodology (1971) does not estimate long-term impacts such as the effects of colleges and universities on business location or the impact on the skills enhancement in the local workforce. Therefore, the long-term and short-term economic impact methods are independent of each other (Elliott, Levin and Meisel, 1988)

> Thus far, the two literatures remain distinct. following the Caffrey and Isaacs framework, economic impact studies continue to measure short-term dollar effects on the local economies. A new and growing literature, however, focuses on the long-term impact of colleges and universities on regional economic development. (p. 19)

Thus, further study should be conducted to gain a better understanding of the long-term quantitative impact of colleges and universities. Elliott, Levin and Meisel (1988) suggest a need for increased study in this area,

> Changing perceptions of the role of higher education in state legislatures may change the scope of future economic-impact studies. Increased recognition of the linkages between higher education and economic development will pressure future study designs to measure not only short-term fiscal impacts on local areas, but also indicators of long-term success in furthering economic growth. Significant research is needed to expand the methodology of economic impact studies to meet this new challenge. (p. 31)

More recently, Creech et al. (1994) calls for the need to for more long-term studies of higher education's impact, "There is an immediate need to

determine what effect the projected increased earning power of an educated populace has on the economy . . . " and " . . . to study the effect of higher education on increased productivity or increased learning capacity" (p. 20). Clearly, emphasis should be placed on the study of the long-term impact of higher education on individuals, economic regions and society in general.

Second, although many economic impact studies of higher education institutions have been conducted since the Caffrey-Isaacs model was presented in 1971, little research investigates the effectiveness of these studies. What outcomes do impact studies generate? This question is not easily answered. Dean (1991) cites Brigham Young University and the University of Utah for gaining benefits from conducting these studies and sharing the results with their constituents. However, these citations lack scientific verification and factors other than the economic impact study could have contributed to the positive results experienced by Brigham Young University and the University of Utah. It is generally believed that these studies help forward the cause of higher education and particular institutions, but by how much? and is it worth the cost? Kinnick and Walleri (1987) summarize this unclear and unresearched issue,

> Little research is available about what difference these studies make, positively or negatively. There is a strong belief, however, that they can help show that higher education is not a drain on local or state resources, but, rather, a stimulus. Having the results may not produce measurable gains; but not having the information may limit the ability of the institution to compete effectively with others for funds and other kinds of support.
> (p. 69)

Furthermore, economic impact studies are supposed to encourage the development of cooperative relationships between higher education institutions and legislators, civic officials and taxpayers. Unfortunately, little

research has been conducted in the area of the effectiveness of impact studies. Even if positive benefits are identified, are the studies justifiable in a cost/benefit sense? Perhaps the costs to conduct the studies exceed the benefits derived. Furthermore, the opportunity costs, or activities that foregone to conduct the impact study, should be researched and considered when determining the cost effectiveness of economic impact studies.

Conclusion

Higher education is increasingly pressured to provide documentation about its economic viability and whether constituents are getting what they are paying for. Technological advances provide the opportunity to increasingly quantify the economic significance of higher education and the economic impact analysis study is a commonly employed method for documenting that significance. Many higher education institutions and systems have used economic impact analysis studies in response to these pressures and to mitigate future questioning and accountability concerns. The studies are normally time-consuming and costly, yet potentially beneficial.

This study provides a new approach to demonstrating the economic impact of an institution by focusing on the impact upon a nonlocal economy. As is shown in this study, institutions may have significant impacts upon not only the local economy, but upon nonlocal economies as well. Therefore, nonlocal economic impact assessments can be valuable for administrators and decision-makers. The methodology for conducting economic impact studies upon nonlocal economies allows institutions and administrators to estimate the economic impact of higher education institutions upon specified economies for which the institution is not located. Just as the methodology

for conducting an economic impact analysis upon a local economy assists institutions and their stakeholders to evaluate institutions, the methodology for conducting economic impact studies upon nonlocal economies is another important tool that extends the realm of possibilities for demonstrating the economic impact of higher education institutions. The nonlocal methodology presented in this paper is based on the theoretical foundation of modern local impact studies which spawned from the Caffrey-Isaacs (1971) model. Estimating nonlocal impact is very different from estimating local impact in terms of data gathering and less so in terms of model building for impact estimations.

Two economic impact studies, one local and the other nonlocal, were conducted as part of this study. The test institution, South Plains College, Levelland has a substantial impact on both economies in terms of business volume and employment. The local economy, Hockley County receives more than $13 million of direct business volume impact and more than $20 million total impact after including indirect impact from the multiplier effect. This equates to a four-to-one return on tax dollars invested in the college by Hockley County residents. The nonlocal economy, Lubbock County, receives more than $11 million in direct business volume impact and more than $21 million in total impact. Direct full-time employment for Hockley County is 255 and another 562 jobs are created by direct spending by the institution, faculty/staff, students and visitors. Total full-time employment impact on Hockley County is 817 jobs. Lubbock County receives a total of 500 jobs created by SPC (54 direct jobs and 446 indirect jobs).

This study estimates only the short-term economic impact of the college on area employment and business volume. Other substantial short- and long-term contributions to individuals and society made by the college

include increasing the local bank deposits, contributing to cultural activities of the community, providing training and education for the workforce and improving the quality of living in the area. Even with the substantial impact colleges and universities have on their economies, the reminder of Romano and Herbert (1985) should resonate, "It must be remembered throughout the course of this discussion, however, that the primary function of a college is to educate - to turn out knowledgeable, creative, productive, and responsible citizens" (p. 1).

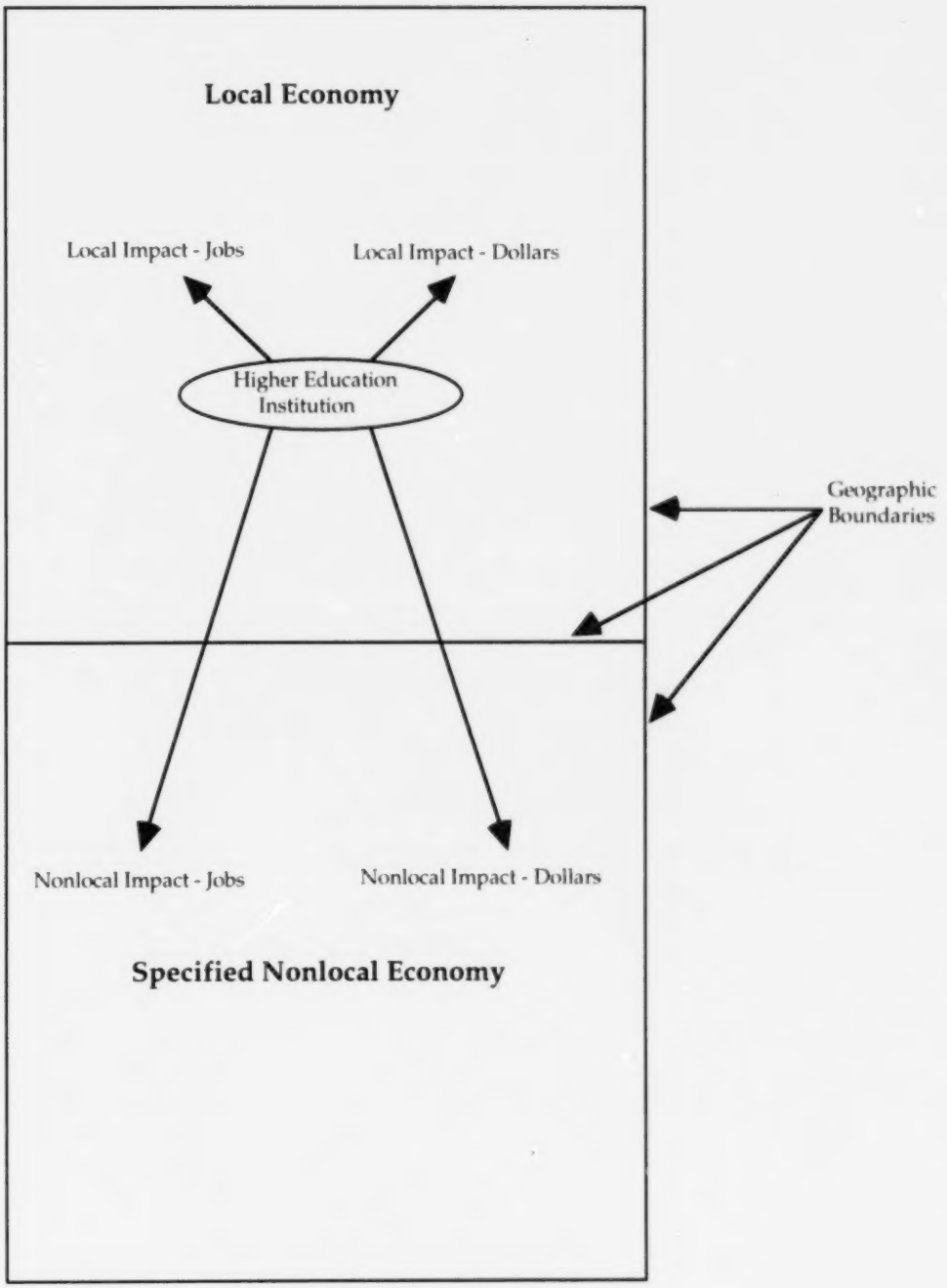

Figure 1
Description of the geographic boundaries of local and nonlocal economic impacts.

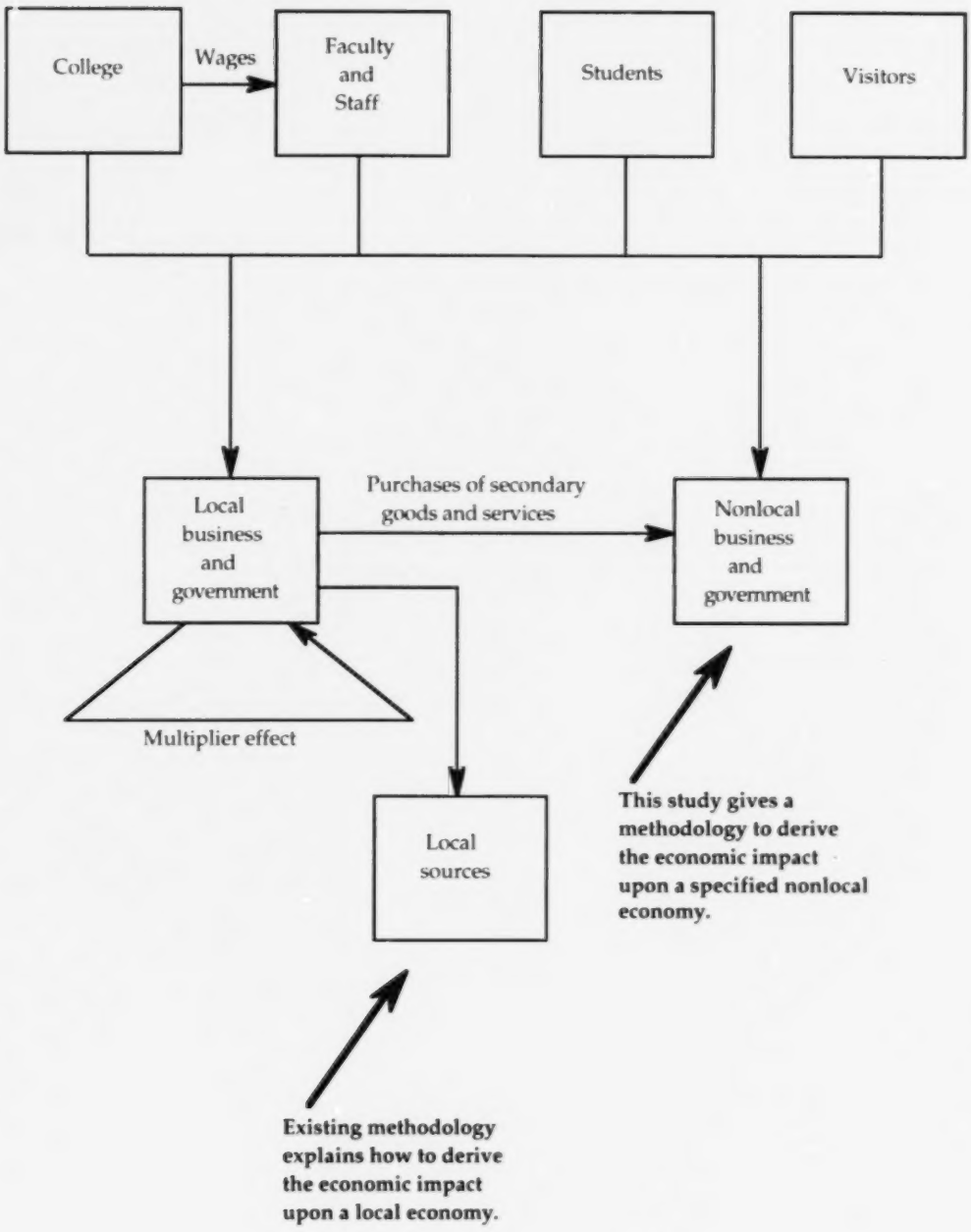
College
Wages
Faculty and Staff
Students
Visitors
Local business and government
Purchases of secondary goods and services
Nonlocal business and government
Multiplier effect
Local sources
This study gives a methodology to derive the economic impact upon a specified nonlocal economy.
Existing methodology explains how to derive the economic impact upon a local economy.

Figure 2
Uniqueness of this study described through the Caffrey-Isaacs two-area expenditure model.

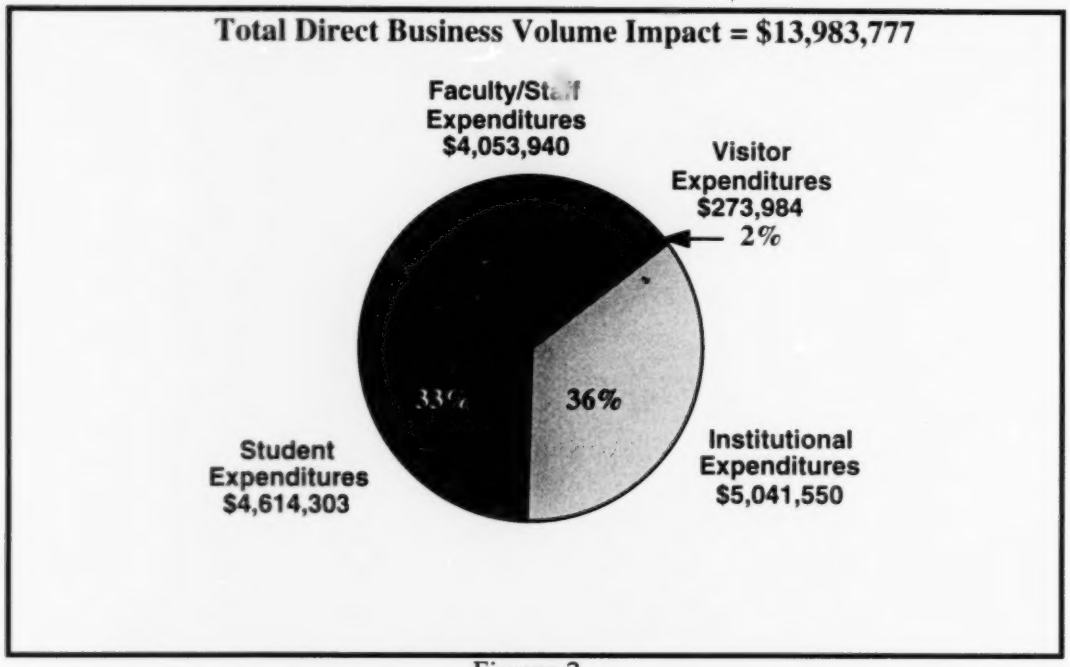

Figure 3
Sources of Direct Business Volume Impact on the Local Economy

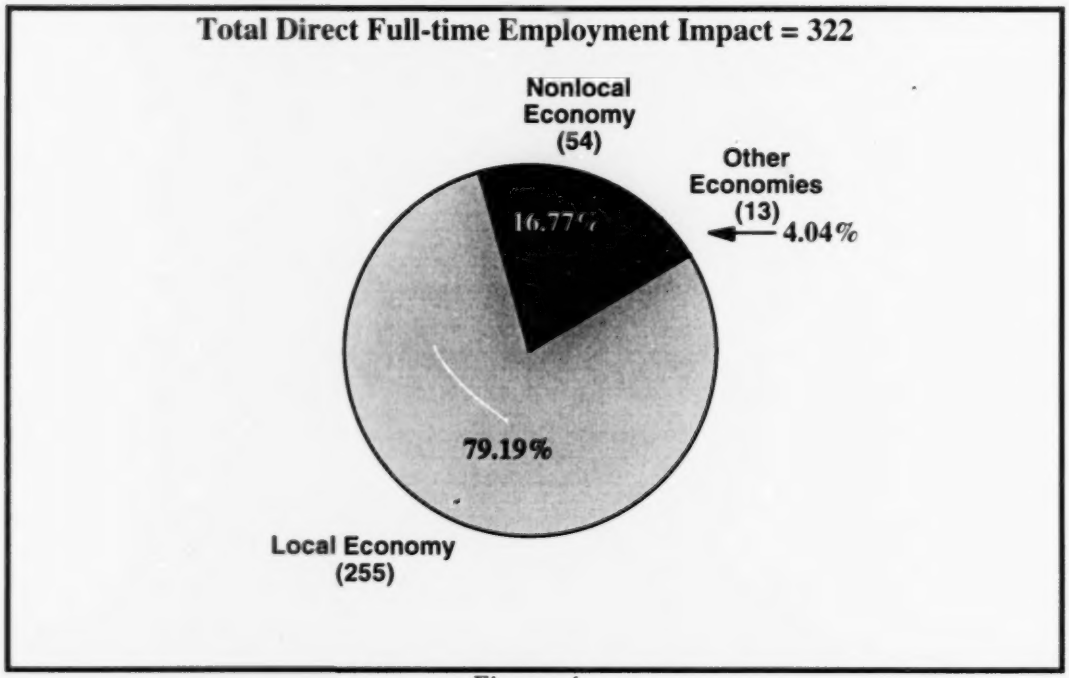

Figure 4
Direct Full-time Employment Impact

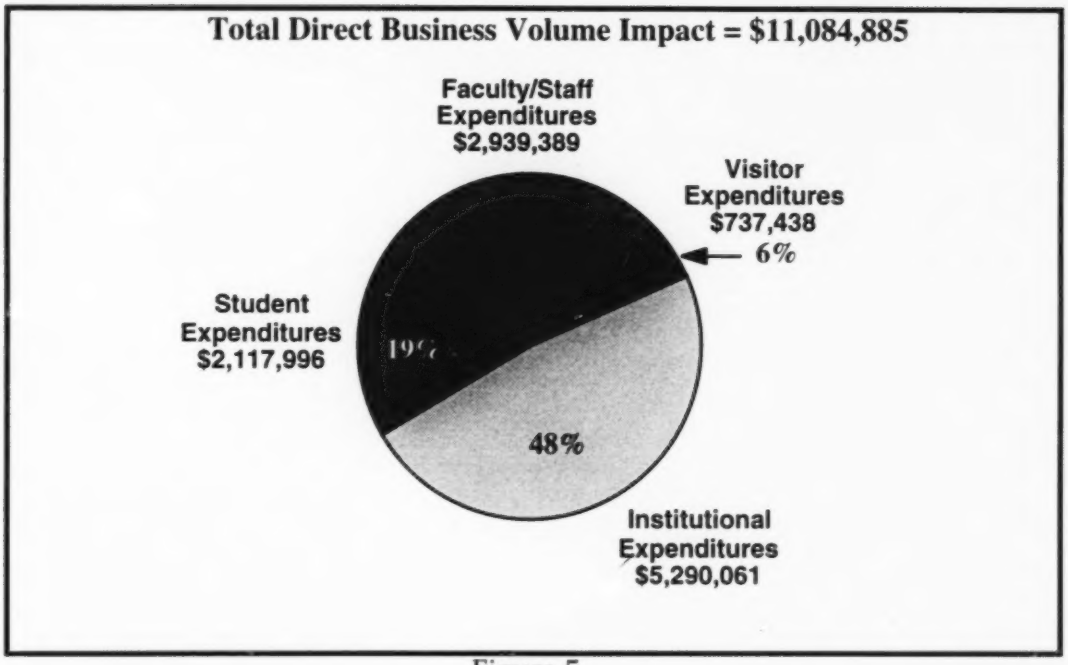

Figure 5
Sources of Direct Business Volume Impact on the Nonlocal Economy

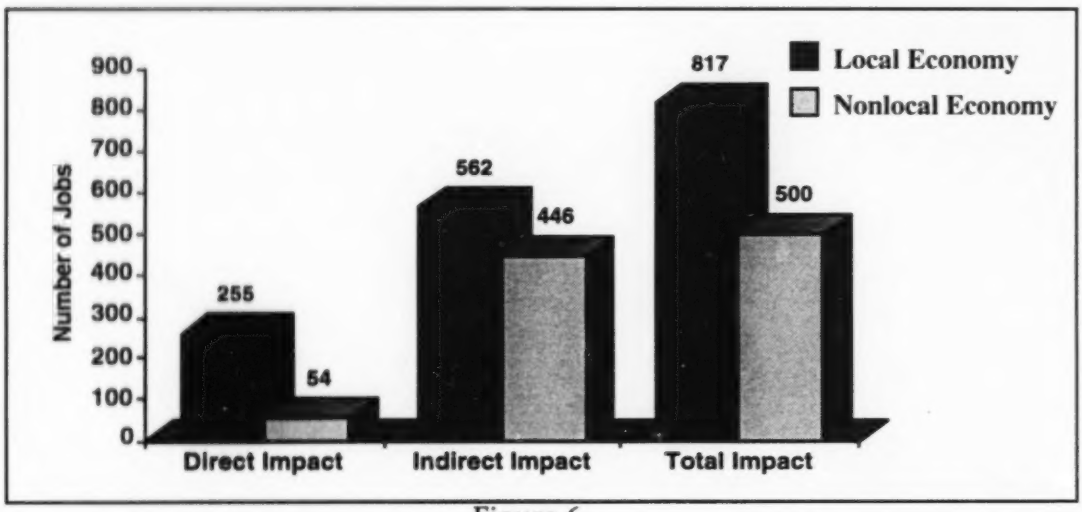

Figure 6
Components of Total Employment Impact on
the Local & Nonlocal Economies

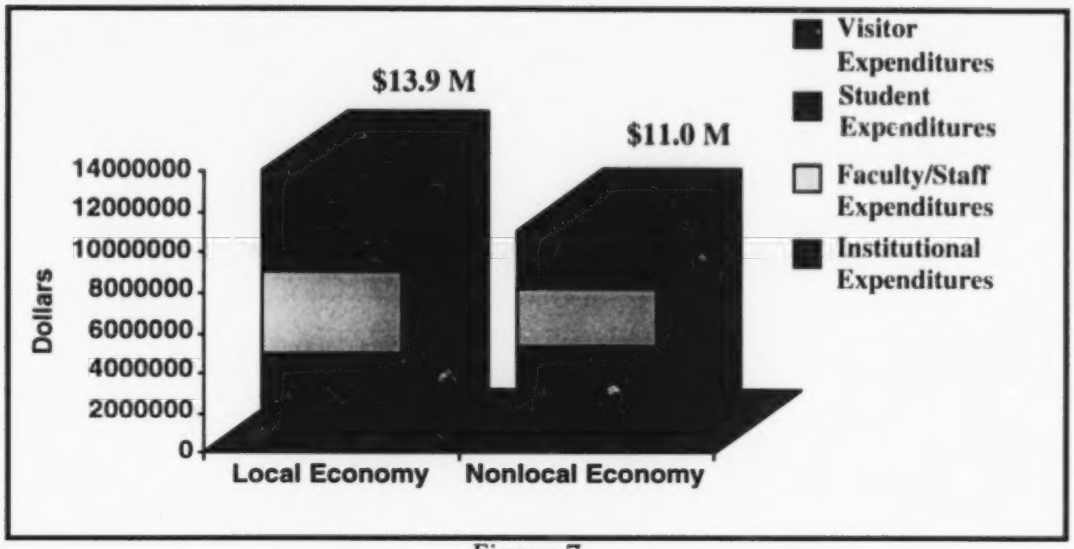

Figure 7
Components of Direct Business Volume Impact

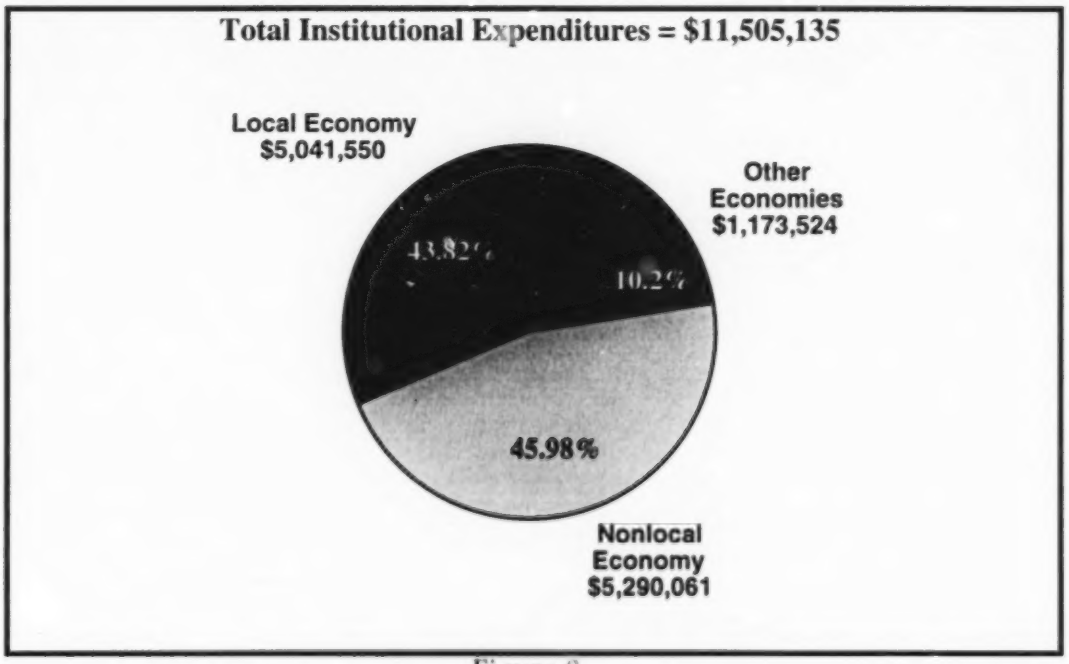

Figure 8
Location of Institutional Expenditures

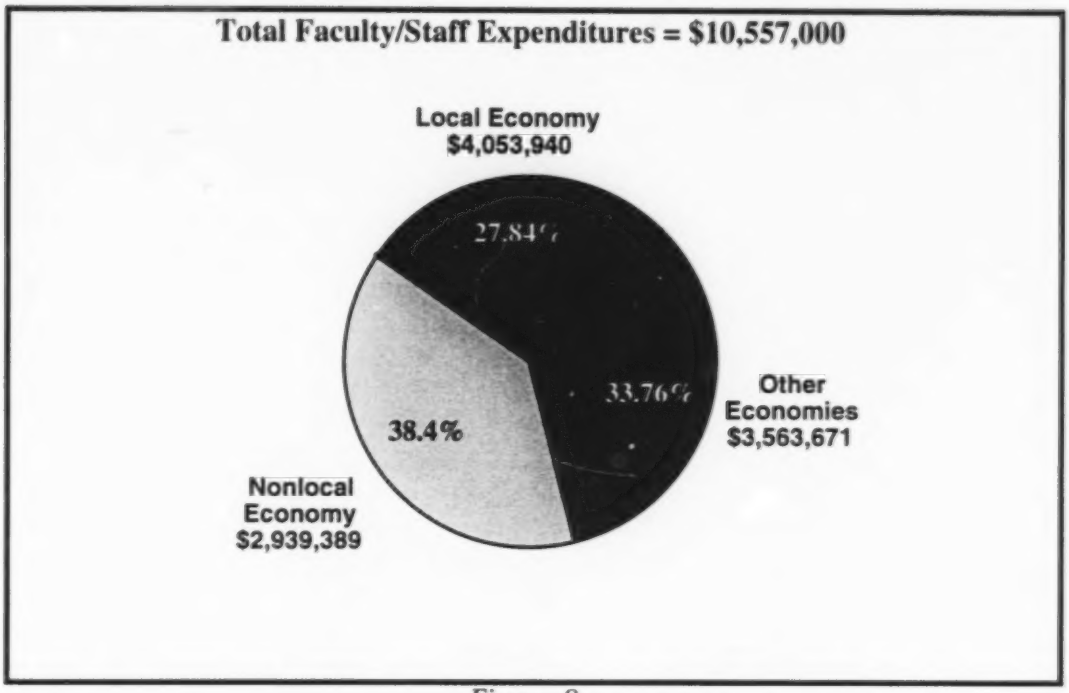

Figure 9
Location of Faculty/Staff Expenditures

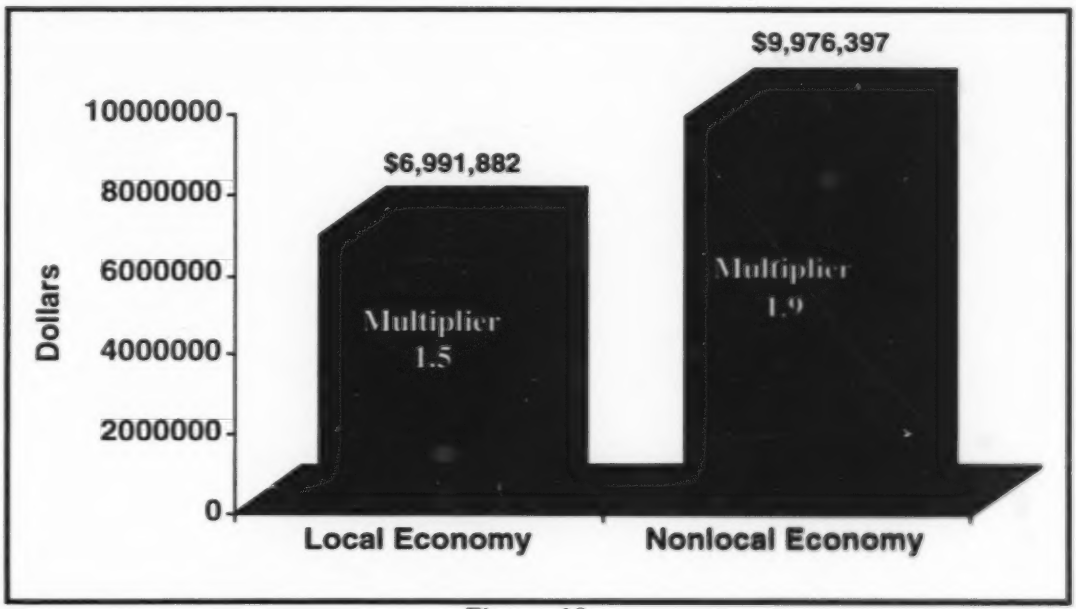

Figure 10
Components of Indirect Business Volume Impact

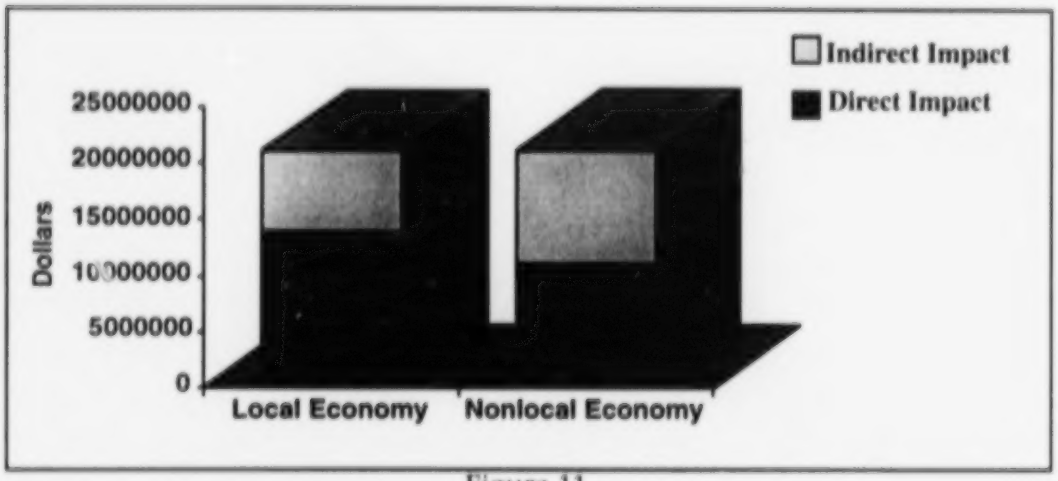

Figure 11
Components of Total Business Volume Impact

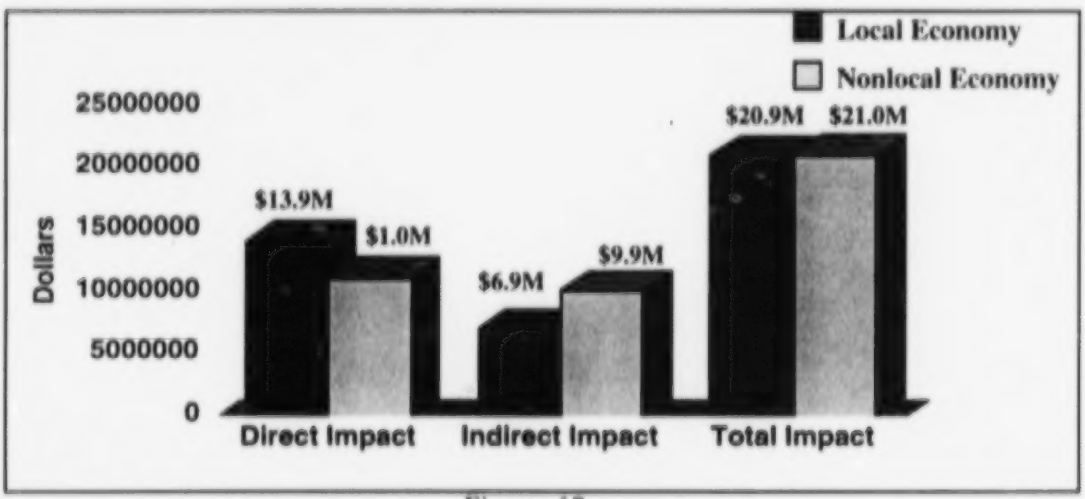

Figure 12
Components of Total Business Volume Impact on
the Local and Nonlocal Economies

SELECTED REFERENCES

Brigham Young University. (1986). Economic impact report. Provo, UT: Brigham Young University.

Caffrey, J. and Isaacs, H. (1971). Estimating the impact of a college or university on the local economy. Washington, D.C.: American Council on Education.

City of Lubbock. (1994). Major employers (50 or more employees). Business and Development Support Services. Lubbock, TX: Author.

Community Fact Sheet. (1994). Levelland, Texas: Chamber of Commerce.

Creech, S., Carpenter, S. and Davis, E. (1991). The direct economic impact of Texas's [sic] expenditure on public baccalaureate and post- baccalaureate education. Paper presented at the meeting of the Association for the Study of Higher Education, Boston, MA.

Creech, S., Carpenter, S. and Davis, E. (1994). The direct economic impact of Texas's [sic] appropriations to higher education. The Review of higher Education, 17, p. 125-141.

Dean, S. (1991). Making an impact. Currents, 17, 27-33.

Elliott, D. S., Levin, S. L. and Meisel, J. B. (1988). Measuring the economic impact of institutions of higher education. Research in Higher Education, 28, 17-33.

Fitzgibbon, W., Glatthaar, J. Martin, J. and Tedin, K. (1994, July 24). The legislature must learn this city needs a strong UH. Houston Chronicle, p. 1E.

Goldstein, H. A. (1990). Estimating the regional economic impact of universities: An application of input-output analysis. Planning for higher education, 18, 51-64.

Gross, H. T. and Weinstein, B. L. (1992). Serving the people: The economic impact of higher education in the region. Denton, TX: Alliance for Higher Education.

Hughes, K. S., Alston, F. K. and Bayne, K. (1988). Beyond education: The economic importance of institutions in their communities. KPMG Peat Marwick Management Issues, June, 1-5.

James, A. and Puth, R. (1990). The economic impact of the university system of New Hampshire on the economy of the state. Durham, New Hampshire: University of New Hampshire, Whittemore School of Business and Economics.

Kansas City Regional Council for Higher Education. (1991). The economic impact of higher education on the Kansas City metropolitan area 1988-1989. Overland Park, KS: Author.

Kinnick, M. K. and Walleri, R. D. (1987). Economic Impact Studies. A primer for institutional research. Tallahassee, FL: Association for Institutional Research.

Kott, J. (1988). Regional economic impact of institutions of higher education. Planning for Higher Education, 16, 19-32.

Leslie, L. L. and Brinkman, P. T. (1988). The economic value of higher education. New York: American Council on Education and Macmillan.

Mallier, T. and Rosser, M. (1986). Economic impact studies and higher education institutions. International Journal on Institutional Management in Higher Education, 10, 21-33.

Pate, J. and Downs, K. (1993). South Plains College Levelland, Texas Audit Report August 31, 1993. Levelland, TX: Pate and Downs P.C.

Pennsylvania Economy League, Inc. (1982). Methods and approaches for the conduct of an economic impact study. Harrisburg, PA: Author.

Perkus, G. (1990). The economic impact of Collin County Community College on Collin County. McKinney, TX: Collin County Community College District, Department of Institutional Research.

Romano, R. and Herbert, N. (1985). The economic impacts of the college on the local economy. Binghamton, NY: Broome Community College, State University of New York, The Institute for Community College Research.

Ryan, G. J. (1983). Handbook for conducting a study of the economic impact of a community college. Lincroft, NJ: Office of Research and Development Brookdale Community College.

South Plains College. (1992). Institutional self-study report for the Southern Association of Colleges and Schools. Levelland, TX: Author.

South Plains College. (1993). General catalog 1993-1994, 34.

Sturm, P. S. (1990). Politically correct and expedient economic impact studies. Institute, WV: West Virginia State College. (ERIC Document Reproduction Service No. ED 321 609)

Texas Higher Education Coordinating Board. (1992). Comparison of preliminary twelfth day headcount enrollments: Fall semesters 1991 and 1992: All Texas institutions of higher education. Austin, TX: Author.

Totty, M. (1994, July 20). College isn't worth it? Don't tell that to Laredo. Wall Street Journal, p. T1, SW Edition.

Walleri, R. D. (1987). Economic impact of Oregon's community colleges. Gresham, OR: Mt. Hood Community College, Department of Research Planning and Computer Services.

Wellsfry, N. L. (1988). Measuring the economic impact of a community college district. Journal of Studies in Technical Careers, 10(2), 136-140.